

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

NOTICE OF RELEASE OF 'Big O' WILD CRABAPPLE

The United States Department of Agriculture, Soil Conservation Service announces the release of 'Big O' Wild Crabapple, Malus coronaria (L.) Mill

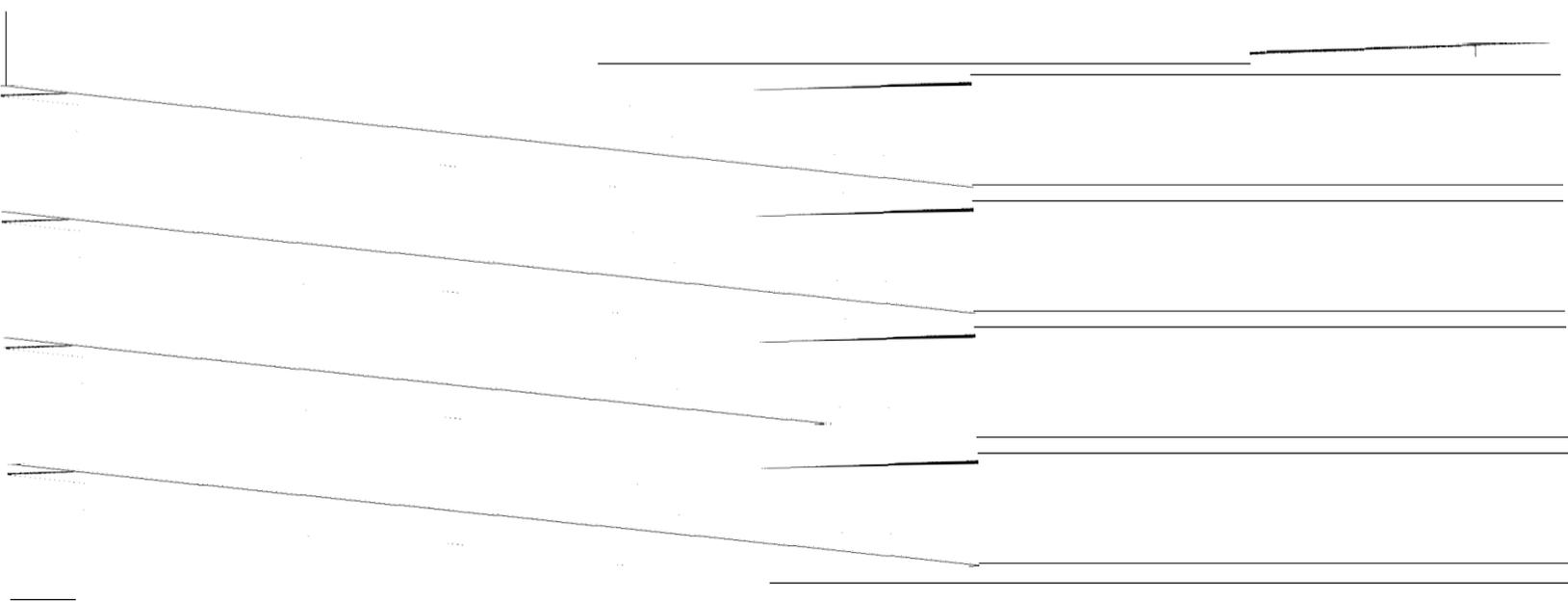
Big O was developed at the Soil Conservation Service Plant Materials Center, Americus, Georgia, for wildlife food, cover, and beautification.

Big O was selected from a native plant collection that consisted of 54 accessions from six states, Alabama, Florida, Georgia, North Carolina, South Carolina and Tennessee.

Big O is a selection for its superior qualities in almost every category tested. This includes superior growth, fruit production, fruit quality and size, disease resistance and bloom color.

Big O was not affected by cedar apple rust.

Big O has been compared to more than 54 accessions of crabapples at the Americus Plant Materials Center for wildlife food and



cover. Crabapples certainly have an aesthetic function; they are also dual-purpose plants, producing food as well as landscape beauty. Recently, with the decline of native dogwoods in the landscape, crabapples could replace them in the southeast for wildlife food and beautification in urban areas.

Crabapples have long been considered an excellent food for deer and other wildlife. There is a need for an adapted variety in the southeast that will consistently set a crop of persistent fruit.

Big O was the most vigorous accession, best survival, persistent fruit production and the largest size fruit. In January 1982, non-rotten fruit from this accession remained on the surface of the ground.

Vigor and attractiveness of bloom is an important criteria for selecting crabapples. Big O blooms around March 24 and the duration of the bloom is about two (2) weeks. A good rating for bloom color attractiveness, and the largest flower size of 44 mm was the best of all accessions tested. The bloom color is white/pink.

The fruit begin to mature around November 5 and remains as mixed, firm, drying/some rotting. Big O was rated superior for fruit quantity/quality, size, weight and seed yield. Therefore, Big O could potentially be useful as wildlife food during the winter and late fall.

Proposed uses include erosion control, wildlife food, cover and beautification in urban areas, windbreaks, screens, hedgerows, and for re-establishment of a native plant community.

The name Big O was selected to reflect its exceptionally large fruit when mature.

A breeder block of plants will be maintained by the Soil Conservation Service Plant Materials Center, Americus, Georgia. Foundation plants will be provided to qualified nurseries from which plants may be produced vegetatively. Foundation plants will be available in the spring of 1993. Certified plants may be produced from seed when foundation plants bloom and fruit.

James B. Newman
Director, Ecological Science Division

10/13/92
DATE

Earl V. Judd
STC, Auburn, Al

8/24/92
DATE

J.W. Judd Acting For, Hershel Reed
STC, Athens, GA

09-21-92
DATE

Billy Abernethy
STC, Columbia, S.C

8/26/92
DATE

RELEASE

OF

'BIG O' WILD CRABAPPLE

INTRODUCTION :

Scientific Name: Malus coronaria (L) Mill.

Common Name: Wild crabapple

Varietal Name: 'Big O'

Other Identification Used: PI-434121, AM-3194

ORIGIN: The fruit of 54 crabapple accessions were collected in 1974 from six states, (Alabama, Florida, Georgia, North Carolina, South Carolina and Tennessee) and assembled at the Americus Plant Materials Center, Americus, Georgia, for evaluation and testing. Billy Tomlinson, district conservationist in Rome, Georgia, collected this wild crabapple accession in 1974 from a native stand in Floyd County.

DESCRIPTION: Big O is a small deciduous tree that grows from 20-30 feet tall with a slender trunk. The leaves are elliptic lanceolate, 3.5-5.0 cm long and 1.5-2.5 cm wide, leaf acute, crenate leaf margin. Leaf base rounded to cuneate. Sepals glabrous on outside. The petals are pink/white fading to

whitish. It blooms in mid - late March. The fruit is a pome, green in color and matures to greenish yellow; fruit size is 45 X 35 mm; and average weight is 28 grams. The fruit matures in mid-November. In January some fruit of Big O is still firm, some drying, and some rotting.

METHOD OF DEVELOPMENT: Selection and direct increase from field collection. Since 1974 Big O has been compared with 54 wild crabapple accession representing native collections from Alabama, Florida, Georgia, South Carolina, North Carolina and Tennessee.

SUPERIOR CHARACTERISTIC: Big O, proved superior to all the other crabapple accessions evaluated for wildlife food in the southeast that will consistently set a crop of persistent fruit.

Big O was selected for its superior qualities in almost every category tested. The categories that were evaluated as superior were growth, fruit production, survival, vigor fruit size and weight, quality and quantity of fruit, late maturity, disease resistance and bloom color.

<u>EVALUATING FACTORS</u>	<u>Rating</u>
1. Survival	100%
2. Vigor	1
3. Growth grow to 15 feet tall in 7 years; best growth of all accessions	1
4. Disease and Insect Resistance	
..cedar apple rust	2
.firę blight	1
.scale	1
.borers	1
5. Canopy Cover	1
6. Flower size and attractiveness	2
Big O bloomed by March 24	
bloom color: pink/white	
bloom duration: 1-2 weeks	
flower size: 44mm	
7. Fruit maturity	1
fruit matures in mid November, but holds fruit long into the winter. In January the fruit is characterized as firm, drying, some rotting and softened fruit is partially eaten.	
8. Fruit size: 35 X 45 mm	1
9. Fruit quality and quantity	2
10. Weight of fruit: 28 grams	1
11. Tree/trunk diameter	1

Big O is best adapted to Major Land Resource Areas (MLRA's) in the southeast.

PROPOSED USES:

1. Wildlife food and cover (deer) used as an ornamental to
2. beautification urban landscapes
3. use as an ornamental to enhance aesthetic value, and to beautify urban landscape.
4. erosion control food plots susceptible to erosion.
5. For re-establishment of adapted native plant communities
6. Potential for replacing native dogwoods due to decline because of disease is the southeastern landscape to enhance aesthetic value.
7. For windbreaks, screens and hedgerows.

AREAS OF ADAPTATION

Big O should be adapted to Northern and Central Georgia, west to Alabama, north to Michigan and New York and east to the Carolinas.

In the wild this type of crabapple is occasionally found along fencerows, old fields and wood margins.

Big O should grow best on moist upland sites.

DISEASE PROBLEMS: Big O is resistant to cedar apple rust. It has not been susceptible to disease during the project evaluation period of 16 years from 1975-1992.

PRODUCTION: A breeder block of plants will be maintained by the Soil Conservation Service Plant Materials Center, Americus, Georgia. Foundation plants will be provided to qualified nurseries from which plants may be produced vegetatively. Foundation plants will be available in the spring of 1993. Cover seed product of foundation plants to produce certified plants!

METHOD OF ESTABLISHMENT: The first step in establishing Big O from seed is to collect fruit in September or October. Usually this seed is stratified at 40°F. By March most of the seed starts to sprout. At this time the seed should be placed in greenhouse. After the young seedlings have been established to greenhouse conditions they can be potted and hardened off. As one or two year old plants they are ready for transfer to field conditions. For best results transplant in late winter/early spring to a moist upland site which has a minimum of plant competition. Plants should be spaced 15-20 feet apart and receive 300-400 #/Ac of 10-10-10 fertilizer for the initial growth years.

SUBMITTED BY: The recommendation for release of PI- 434121, BIG O crabapple, was prepared by Donald Surrency, Plant Materials Specialist, USDA Soil Conservation Service, Athens, Georgia; and Charle M. Owsley, Manager, Americus Plant Materials Center, USDA Soil Conservation Service, Americus, Georgia for release by the soil Conservation Service.

<u>STATE</u>	<u>COLLECTIONS</u>	<u>ACCN.NOS.</u>	<u>COUNTY</u>	<u>TOWN</u>
Alabama	1	434134	Chambers	Waverly
Florida	1	434123	Jefferson	Lamont
Georgia	19	434112	Stewart	Lumpkin
		9002032	Tattnall	Reidsville
		9002033	Heard	Franklin
		434113	Screven	Sylvania
		434114	Thomas	Thomasville
		434115	Troup	LaGrange
		434116	Green	Greensboro
		9002034	Muscogee	Columbus
		434117	Bulloch	Statesboro
		434118	Baldwin	Milledgeville
		434119	Glynn	Thalman
		434121	Floyd	Rome
		434122	White	Cleveland
		434124	Liberty	Hinesville
		434125	Liberty	Hinesville
		434126	Rabun	Clayton
		9002038	Whitfield	Dalton
		9002039	Whitfield	Dalton
		9002037	Towns	Hiawassee
		9002031	Montgomery	Mt. Vernon
South Carolina	2		Calhoun	St. Mathews
			Calhoun	St. Mathews
North Carolina	14	9002040	Jackson	Sylva
		9002041	Jackson	Sylva
		9002042	Buncombe	Asheville
		434127	"	"
		434131	"	"
		434132	"	"
		9002046	"	"
		434128	Macon	Franklin
		9002043	"	"
		434130	Haywood	Waynesville
		434129	Mitchell	Bakesville
		9002044	"	"
		9002045	"	"
		434133	"	"
Tennessee	1	9002035	Rhea	Dayton

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CRABAPPLES AFFECTED BY CEDAR RUST - MAY 14, 1980

1 = Least

5 = heaviest

<u>AM NO.</u>	<u>RATING</u>	<u>AM NO.</u>	<u>RATING</u>
3054	3	2299	1
3179	5	3208	2
3118	3	3209	5
3182	3	3207	2
3183	5	3215	2
3184	3	3210	2
3185	4	3218	5
3186	2	3219	2
3190	5	3220	2
3191	5	3232	3
3192	5		
3193	4		
3194	2		
3196	3		
3197	3		
3198	5		
3199	4		
3200	3		
3201	4		
3204	5		
3211	5		
3212	5		
3213	1		
3214	1		
3217	5		

1310305 - CRABAPPLE FRUIT MATURITY DATA

JANUARY 5, 1982

<u>AM NO.</u>	<u>PI NO.</u>	* <u>Fruit Maturity</u>
3181	T02032	8
3182	T02033	0
3184	434114	9 -
3185	434115	8
3189	434117	8
3190	434118	8
3191	434119	8
3193	T02036	9
3194	434121	6E
3197	434123	9
3199	434125	9
3204	T02038	8
3209	T02042	8
3210	434127	8
3212	T02043	0
3213	434130	0
3232	434134	6

* Fruit Maturity Key -

1	Hard green
2	Mature and on tree
2.5	Rotting on tree
3	Falling to ground
4	All on ground, firm fruit
5	Mixed, firm fruit and drying
6	Mixed, firm, drying, some rot ing
7	Drying and shrivelling
8	Shrivelling and rotting
9	All dried up and rotting
0	Gone
E	Partially eaten fruit

Crabapples Affected by Cedar Apple Rust - August 12, 1881

The Crabapple project was started with seed in the greenhouse and the transplanted to field 27 to produce planting stock. This was 4/5 mile from field 5 which is where the project was later established. Plants surplus to those needed for the project were not destroyed at the time but were left growing in field 27. With no intentional connection, some plants of Southern Red Cedar (Juniperus silliciola) were left growing nearby. 1981 was a year especially favorable to the development of cedar rust. The cedar trees were literally covered with "cedar apples", and the leaves of the crabapple trees were affected with rust varying from severe to light. Notes of this are listed below:

<u>AM NO.</u>	<u>PL. NO.</u>	<u>NO. DEAD TREES</u>	<u>NO. LIVE TREED</u>
3054	434135	3	28
3179	434112	3	0
3180		1	15
3181	T02032	0	2
3182	T02033	0	2
3183	434113	6	3
3184	434114	0	36
3185	434115	0	48
3188	T02035	2	6
3189	434117	1	15
3191	434119	0	18
3192	434120	0	30
3193	T02036	0	17
3194	434121	0	16
3196	434122	0	9
3197	434123	0	10
3198	434124	0	22
3199	434125	0	12
3200	T02037	0	5
3201	434126	0	12
3204	T02038	2	1
3205	T02039	0	1
3207	T02040	0	14
3208	T02041	0	2
3209	T02042	0	8
3210	434127	0	10
3211	434128	1	4
3212	T02043	4	4
3213	434130	0	13
3214	434129	0	13
3215	T02044	2	7
3217	434131	7	0
3218	434132	3	6
3219	T02046	0	5
3220	434133	0	20
3232	434134	0	20

1310305 - CRABAPPLE INITIAL EVALUATION
TREE AND TRUNK DATA - 1980, DECEMBER 12

AM NO.	PI NO.	Avg . HT cm	Avg . WDT cm	* Trunk Diameter cm
3054	434135	180	160	3.5 +
3179	434112	120	202	5
3181	T02032	160	120	5
3182	T02033	150	230	6
3183	434113	210	230	5
3184	434114	280	200	7
3185	434115	200	260	5.5 +
3186	434116	190	180	5.5 +
3189	434117	280	220	6.5
3190	434118	200	220	5.5
3191	434119	210	240	5.5
3192	434120	240	230	8.5
3193	T02036	210	100	6.5 +
3194	434121	210	260	9
3196	434122	180	200	5
3197	434123	190	110	3.5 +
3198	434124	140	100	5
3199	434125	270	210	6.5
3200	T02037	204	200	8
3201	434126	210	200	5.5
3204	T02038	200	190	6.5
3211	434128	180	200	5 +
3212	T02043	180	170	4
3213	434130	270	230	5
3214	434129	250	2100	4.5 +
3216	T02045	200	140	4 +
3217	434131	180	230	5.5

+ = Several Stems

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CRABAPPLE INITIAL EVALUATION - 1982
SEPTEMBER 22, 1982

AM NO.	PI NO.	Canopy Cover cm	Ht cm	Caliper cm	Plts Surv %	* Fruit	
						Mat. Key	Data
3212	T02043	300	350	6	100	-	
3213	434130	250	300	8	100	2.5	
3214	434129	420	440	3	100	2	
3215	T02044	100	220	4	60	-	
3216	T02045	220	240	4	80	-	
3217	434131	275	300	4	100	2	
3218	434132	275	300	4	100	-	
3219	T02046	100	215	3	100	-	
3220	434133	300	250	6	100	1	Some fruit killed by fungus
3232	434134	300	250	7	100	1	Rust killed

* Fruit Maturity Key -

1	Hard green
2	Mature and on tree
2.5	Rotting on tree
3	Falling to ground
4	All on ground, firm fruit
5	Mixed, firm fruit and drying
6	Mixed, firm, drying, some rotting
7	Drying and shrivelling
8	Shrivelling and rotting
9	All dried up and rotting
0	Gone
E	Partilly eaten fruit

SEPTEMBER 22, 1982

2344	421892	40	120	1	10	-	
3054	434135	250	220	5	80	-	
3057	T02031	250	220	6	30	-	
3179	434112	250	220	6	100	-	
3181	T02032	150	200	6	30	2	All fruit killed by rust
3182	T02033	275	230	5	100	-	
3183	434113	300	300	9	100	-	
3184	434114	300	375	6	100	-	
3185	434115	350	250	6	70	3	Rust killed many fruit
3186	434116	300	275	9	100	-	
3188	T02035	80	100	3	100	-	
3189	434117	300	300	7	90	8	Rust killed many fruit
3190	434118	300	250	6	100	-	All fruit killed by rust
3191	434119	350	300	10	30	1	Rust killed many fruit
3192	434120	300	350	8	100	-	
3193	T02036	300	250	6	100	-	Rust killed many fruit
3194	434121	450	475	8	100	1	
3196	434122	250	220	5	100	-	
3197	434123	300	275	6	100	1	Rust killed many fruit
3198	434124	300	440	3	100	-	
3199	434125	300	300	7	100	1	Lot of fruit killed by fungus
3200	T02037	450	440	5	100	-	
3201	434126	250	230	5	90	-	
3204	T02038	250	275	6	100	-	Fruit rust kill off
3205	T02039	275	225	4	40	-	
3207	T02040	100	150	3	50	-	
3208	T02041	80	200	3	80	-	
3209	T02042	250	250	6	90	-	
3210	434127	325	350	9	100	-	
3211	434128	250	220	5	100	-	

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CRABAPPLE FLOWERING DATA - 1982

AM No.	PI No.	No. Plants in Blm	Color	Flower Size (mm)	1-9 Attractiveness	Bloom Date
3057	T02031	3 / 5	White	30	5	3/24
3054	434133	4, 7	White	30	5	3/24
3179	434112	1,2,3	Pnk/wh.	35	7	3/24
3181	T02032	8,10	Pnk/Wh.	36	4	3/24
3182	T02033	1-10	Wh/Pnk	32	2	3/30
3183	434113	1-8,10	Wh/Pnk.	30	4	3/24
3184	434114	1,2,4,5, 6,7,8	Wh/Pnk.	35	4	3/24
3185	434115	1,2,5,7, 8,9,10	Wh/Pnk	32	2	3/24
3186	434116	1-7	Wh/Pnk.	40	5	3/24
3189	434117	1,3,4,5, 6-10	Wh/Pnk,	32	4	3/24
3190	434118	1-10	Wh/Pnk	38	2	3/24
3191	434119	2,3,5,7	Wh/Pnk,	38	3	3/24
3192	434120	1-10	Pnk/Wh	35	2	3/24
3193	T02036	1-5, 7,8, 9,10	Wh/Pnk.	38	4	3/24
3194	434121	1-10	Wh/Pnk.	44	3	3/24
3197	434123	1,2,4-10	Pnk/Wh.	38	3	3/19
3198	434124	2,3,6,8 9/10	Pnk?Wh	30	3	3/24
3199	434125	1-10	Wh/Pnk.	32	3	3/15
3200	T02037	1-9	Wh/Pnk,	40	3	3/24
3201	434126	1-8	Pnk/Wh.	35	3	3/24
3204	T02038	1/3-10	Wh/Pnk.	42	3	3/24
3205	T02039	1,2,5,	Wh/Pnk.	30	7	3/24
3209	T02042	1-8,10	Pnk/Wh.	31	4	4/06
3210	434127	1-10	Pnk/Wh.	32	3	4/06
3211	434128	1,2,3, 5-10	Wh/Pnk.	30	5	4/03
3212	T02043	1-10	Wh/Pnk.	30	5	4/06
3213	434130	1,3,4,5 6/10	Wh/Pnl.	45	4	3/24
3215	T02044	1,8,10	Wh/Pnk.	30	6	4/15
3216	T02045	3	Pnk/Wh.	30	4	3/24
3217	434131	1-10	Wh/Pnk.	31	4	4/08
3218	434132	1-10	Wh/Pnk.	30	4	4/11
3220	434133	1-10	Pn./Wh.	33	4	4/27
3232	434134	1-8	Wh/Pnk.	32	4	3/24

Note: Bloom duration averaged 1 - 2 weeks on all accessions above

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CARBAPPLE INITIAL EVALUATION - 1982
SEPTEMBER 22, 1982

AM NO	PI No.	No. Plt	Date	Leaf		V	STM		FOL		FOL Res.		FRT Res.
		Mat Frt	Frt Mat.	Lg cm	Wd cm	I G	A B	D N	A B	D N	D I	I N	D I
2344	421892	-	-	-	-	9	8	8	9	9	9	-	-
3054	434135	-	-	4	3	7	4	3	7	7	8	8	-
3057	T02031	-	-	4	4	8	4	4	8	8	8	8	-
3179	434112	-	-	4	3	7	4	3	8	8	8	8	-
3181	T02032	1	9/22	8	6	6	4	4	5	5	5	5	5
3182	T02033	-	-	4	4	6	4	3	7	7	7	7	-
3183	434113	-	-	4	2	7	4	4	7	7	7	7	-
3184	434114	-	-	5	4	7	5	4	7	7	7	7	-
3185	434115	2	10/15	6	4	6	4	4	6	6	6	6	7
3186	434116	-	-	7	5	4	3	3	4	4	4	4	-
3188	T02035	-	-	6	4	6	5	5	6	6	6	6	-
3189	434117	1	9/01	4	3	6	4	4	6	6	6	6	8
3190	434118	-	-	3	2	7	4	4	7	7	7	7	-
3191	434119	2	10/30	5	3	7	4	4	7	7	7	7	4
3192	434120	-	-	4	4	6	4	4	6	6	6	6	-
3193	T02036	-	-	6	4	6	4	4	6	6	6	6	-
3194	434121	10	11/05	2	2	1	2	2	2	2	2	2	2
3196	434122	-	-	4	3	7	4	3	7	7	8	8	-
3197	434123	9	10/10	5	3	5	4	4	6	6	6	6	6
3198	434124	-	-	4	3	5	4	4	4	5	6	6	-
3199	434125	3	10/20	5	3	7	4	4	6	6	6	6	7
3200	T02037	-	-	2	2	3	3	3	3	3	3	3	-
3201	434126	-	-	4	4	7	4	4	7	7	7	7	-
3204	T02038	-	-	3	2	6	4	4	6	6	6	6	-
3205	T02039	-	-	5	2	7	4	4	6	6	6	6	-
3207	T02040	-	-	8	6	6	5	5	6	6	6	6	-
3208	T02041	-	-	7	6	5	5	5	6	6	6	6	-
3209	T02042	-	-	4	2	7	4	4	7	7	7	7	-
3210	434127	-	-	7	5	5	4	4	5	5	6	6	-
3211	434128	-	-	4	3	8	4	3	7	7	8	8	-
3212	T02043	-	-	5	4	5	4	4	7	7	7	7	-
3213	434130	3	9/22	3	3	4	4	4	3	3	3	3	6
3214	434129	3	9/22	3	3	2	3	3	3	3	3	3	3
3215	T02044	-	-	8	7	6	4	4	4	5	5	5	-
3216	T02045	-	-	7	5	5	4	4	5	5	5	5	-
3217	434131	1	9/22	4	3	7	4	4	7	7	7	7	3
3218	434132	-	-	4	4	7	4	4	7	7	7	7	-
3219	T02046	-	-	8	7	4	4	4	5	5	6	6	-
3220	434133	1	10/15	6	4	5	4	4	5	5	5	5	5
3232	434134	3	10/10	6	5	5	4	4	6	6	6	6	6

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CRABAPPLE FRUIT DATA - 1982

DECEMBER 1, 1982

AM No.	PI No.	* Frt Amt	Best Fruit Prod.	**Fruit Mat. Dey	Seed			Frt Size mm	Avg Wt. Fruit grams	Wt. Seed per Frt Avg Grams
					A M T	F I L	U N			
3181	T02032	6	#8	2.5	6	6	5	20x20	4.0	.35
3185	434115	7	#1	8	(too small for sample)					
3189	434117	7	#1	7	6	6	5	10x10	2.0	.30
3191	434119	6	#3	7	6	6	5	20x15	5.0	.37
3194	434121	3	#2	6	3	3	3	40x30	28.0	3.00
3197	434123	7	#7	6	5	5	5	18x15	6.0	.40
3199	434125	7	-	0						
3210	434129	5	#2	2.5	4	4	4	35x30	14.0	3.00
3213	434130	6	#6	6	4	4	3	30x25	23.0	3.00
3217	434131	7	-	0						
3220	434133	7	-	0						
3232	434134	7	#2	7	(too small for sample)					

* Fruit Amount + 1 - Best, 9 - Least, 0 - No fruit.

** Fruit Maturity Key

-	1	Hard green
	2	Nature and on tree
	2.5	Rotting on tree
	3	Falling to ground
	4	All on ground, firm fruit
	5	Mixed, firm fruit and drying
	6	mixed, firm, drying some rotting
	7	Drying and shrivelling
	8	Shrivelling and rotting
	9	All dried up and rotting
	0	Gone

*** Average weight of one fruit - 10 sampled per accession

**** Net weight of seed for average fruit

1310305

CRABAPPLE INITIAL EVALUATION
FLOWERING DATA - 1980

AM No.	PI No.	YD PD	Bloom Date	Recov Date	Flower Color	Flower Size	No. Plants Bloom	Flower			Resistance	
								A B	U N	A T	Date 5/5	Date 9/24
3054	434135	75	4/7	3/10	Pink	3	7	5	2	2	7	9
3179	434112	"	"	"	"	"	4	9	-	2	6	9
3181	T02032	"	"	"	"	4	1	9	-	2	4	4
3182	T02033	"	4/14	"	"	4	10	1	1	1	6	7
3183	434113	"	4/7	"	"	3	10	5	2	2	4	7
3184	434114	"	"	"	"	3	7	1	1	2	5	4
3185	434115	"	"	"	"	3	5	2	2	2	4	3
3186	434116	"	"	"	"	3	1	7	-	2	2	3
3189	434117	"	"	"	It	3	5	3	2	2	5	5
3190	434118	"	"	"	"	3	2	4	4	2	4	5
3191	434119	"	"	"	"	3	4	1	1	1	5	4
3192	434120	"	It	"	"	3	10	-	2	2	4	5
3193	T02036	"	"	"	"	3	6	4	3	2	5	3
3194	434121	"	"	3/06	White	4	4	7	-	2	3	3
3196	434122	"	4/14	3/10	Pink	3	4	8	-	2	7	9
3197	434123	"	4/7	"	"	3	5	2	2	2	4	3
3198	434124	"	It	"	"	3	2	2	2	2	9	7
3199	434125	"	It	"	"	3	2	3	2	2	5	3
3200	T02037	"	"	"	White	4	2	2	7	2	5	5
3201	434126	"	"	It	Pink	-	1	9	-	-	4	5
3204	T02038	"	"	"	"	3	9	3	2	2	4	6
3211	434128	"	4/14	3/28	It	3	10	3	2	3	3	8
3212	T02043	"	"	"	It	3	4	8	-	2	3	5
3213	434130	"	4/7	3/10	White	3	6	3	2	2	2	5
3214	434129	"	4/14	3/28	Pink	3	1	7	5	3	1	3
3216	T02045	"	4/7	"	"	2	1	7	-	2	2	3
3217	434131	"	4/14	"	"	4	1	3	2	1	3	7

NOTE: Plants in bloom on 4/7/80 were nearly all finished by 4/14/80.
Plants in bloom on 4/14/80 were nearly all finished by 4/23/80.

Table 2 1310305 - CRABAPPLE INITIAL EVALUATION - 1981 NOTES

AM No	PI No.	**** Frt Amt	frt Size mm	frt			** Avg Ut. Fruit grams	frt Mat. Date 11/23/81	**Wt. Seed		Caliper an	
				Res.	Best	•			Per Frt Avg grams	Seed		
2344	421892	0	-	-	-	-	-	-	-	14		Average weight of one
3054	634135	0	-	-	-	-	-	-	-	4		fruit - 10 sampled per
3057	T02031	0	-	-	-	-	-	-	-	3.5		accession.
3179	434112	0	-	-	-	-	-	-	-	4.5		
3181	102032	9	30x30	4	3	8	16	6	.07	4.5	*	Fruit Maturity Key
3182	102033	8	25x20	4	2	-	4	7	.1	4.5		Hard green.
3183	634113	0	-	-	-	-	-	0	-	5	2	mature and on tree.
3184	434114	5	22x18	4	3	1	4.4	6	.16	6	2.5	Rotting on tree.
3185	434115	6	25x18	4	3	1	5.8	6	.15	5	3	Falling to ground.
3186	434116	0	-	-	-	-	-	0	-	5	4	All on ground, firm
3187			Dead -	8/10	81							fruit.
3188	T02035	0	-	-	-	-	-	-	-	1.5		Mixed, firm fruit
3189	434117	6	30x21	4	3	1	8	6	.22	7		drying.
3190	436118	7	26x18	4	3	2	6.2	8	.14	6	6	Mixed, firm, drying
3191	636119	6	25x20	4	3	4	7.2	2	.17	5		some rotting,
3192	634120	0	-	-	-	-	-	0	-	7.5		Drying & shrivelling.
3193	T02036	8	25x20	4	3	4	7.0	6	.21	5	8	Shrivelling & rotting.
31%	634121	2	48x42	4	3	3	43	6	.26	10	9	All dried up and
31%	434122	0	-	-	-	-	-	-	-	3		rotting.

AM No.	PI No.	No.	Plt	Date	Leaf			V	SIM			FOL			Resist.			G OO		A F					Basal	Canopy		Ptt
		Plt	Nat	Frt	Lg	Wd	A	I	A	D	A	D	D	I	D	L	1	C	M	I	U	P	K	Area	Cover	HT	Surv	
		Est.	Frt	Mat.	cm	cm	T	G	B	N	B	N	I	N	R	PR	PS	O	T	L	W	E	Q	cm	cm	cm	(%)	
2344	421892	10	0	-	3	1	8	9	8	8	8	0	5	4	7	8	8	8	-	-	-	-	-	5	45	130	10	
3054	434135	10	0	-	5	4	5	5	3	3	4	4	6	3	4	4	4	4	-	-	-	-	-	25	210	230	90	
3057	102031	10	0	-	3	3	4	4	3	3	3	3	4	3	3	4	4	3	-	-	-	-	-	30	240	200	30	
3179	434112	-	0	-	4	3	4	4	2	2	3	3	5	3	3	4	3	4	-	-	-	-	-	25	170	250	100	
3181	102032	10	1	11/23	6	4	4	4	3	3	4	4	4	4	4	4	4	4	8	8	4	3	4	15	230	250	30	
3182	102033	10	9	"	5	3	3	3	3	2	3	3	4	3	3	4	4	3	6	6	4	3	4	25	300	245	100	
3183	434113	10	7	-	6	4	5	4	3	3	4	4	4	3	4	4	4	4	-	-	-	-	-	40	270	260	100	
3184	434114	10	7	11/23	5	3	5	4	3	3	4	4	4	3	4	4	4	4	4	4	3	3	4	25	300	325	100	
3185	434115	10	6	"	6	2	5	5	3	3	4	4	4	4	4	4	4	4	5	5	4	3	4	20	300	220	80	
3186	434116	10	1	-	5	4	4	4	3	3	3	3	3	3	3	4	4	4	-	-	-	-	-	30	300	200	100	
3188	102035	10	0	-	3	2	8	8	6	6	7	7	7	5	6	6	6	6	-	-	-	-	-	5	80	100	90	
3189	434117	10	6	11/23	4	2	3	3	3	3	3	3	3	3	3	4	4	4	3	3	4	3	4	30	350	400	90	
3190	436118	10	10	"	5	3	4	4	3	3	4	4	4	4	4	4	4	4	5	5	4	3	4	10	300	310	100	
3191	434119	-	3	"	7	4	5	5	3	3	4	4	4	3	4	4	4	4	4	4	3	2	2	30	300	230	50	
3192	434120	-	7	-	6	4	3	3	2	2	3	3	2	2	3	3	3	3	-	-	-	-	-	30	340	400	100	
3193	702036	10	6	11/23	5	3	4	4	3	3	4	4	4	4	4	4	4	4	3	3	4	3	1	4	15	280	240	100
3194	434121	10	10	11/23	5	1	1	2	2	1	1	1	2	1	1	2	2	2	2	2	3	3	4	35	400	500	100	
3196	434122	-	0	-	5	4	4	3	3	3	3	3	4	2	3	4	3	4	-	-	-	-	-	35	230	260	100	
3197	434123	10	9	11/23	5	2	3	3	3	3	3	3	2	2	3	4	4	4	5	5	4	3	4	15	300	300	100	
3198	434124	10	0	-	5	3	4	3	3	3	3	3	5	3	3	4	4	4	-	-	-	-	-	40	270	330	100	
3199	434125	-	9	11/23	4	2	3	3	3	3	3	3	3	3	3	4	4	3	3	3	3	3	4	35	360	310	100	
3200	102037	10	1	-	6	4	2	2	2	2	2	2	4	3	-	4	4	3	-	-	-	-	-	35	300	350	100	
3201	434126	10	0	-	5	3	4	4	3	3	4	4	3	3	4	4	4	4	-	-	-	-	-	25	280	300	90	
3204	702038	-	9	11/23	5	3	4	4	3	3	3	3	4	3	4	4	3	4	5	5	4	3	4	25	300	300	100	
3205	702039	10	1	-	5	3	7	6	5	5	6	6	6	5	6	5	5	6	-	-	-	-	-	10	220	200	40	
3207	102040	10	0	-	5	4	7	7	5	5	5	5	4	3	6	6	6	6	-	-	-	-	-	8	110	130	50	
3208	102041	10	0	-	5	5	7	7	5	5	6	6	4	4	5	6	6	6	-	-	-	-	-	5	80	160	80	
3209	102042	10	5	11/23	5	3	4	4	3	3	3	3	3	3	4	4	4	4	6	6	4	3	4	20	300	250	90	
3210	434127	10	7	11/23	7	4	3	3	3	3	2	2	3	3	3	4	3	3	4	4	3	3	4	10	340	380	100	
3211	434128	10	1	-	5	2	6	6	3	3	5	4	6	3	4	4	4	3	-	-	-	-	-	30	280	260	100	
3212	102043	-	9	11/23	6	4	3	3	3	3	3	3	3	3	3	4	3	3	8	8	4	3	4	18	230	320	100	
3213	434130	10	5	11/23	8	5	3	4	3	3	3	3	3	3	3	4	3	4	7	7	4	2	2	35	330	350	100	

Table 1. 131030J - CRABAPPLE INITIAL EVALUATION - 1981 NOTES (Continued)

AM NO.	PI NO-	No.		Date	leaf		8/11		Rated/Comparisons										Seed					Plts Surv (%)			
		No Plt	Plt Mat		Frt	Lg Wd	A I	V	SIM	FOL	RESIST	G OO	A F	Basal	Canopy	Plts											
		Est.	Frt	Mat.	cm	cm	T	G	B	N	B	N	I	N	R	PR	PS	O	T	L	N	E	Q	cm	cm	cm	
3218	434132	-	0		5	4	4	4	3	3	4	4	5	3	4	4	4	3	-	-	-	-	-	20	260	320	100
3119	T02046	10	0		5	5	7	7	4	4	6	6	4	4	4	5	5	5	-	-	-	-	-	7	100	160	100
3220	434133	10	2		6	6	3	3	3	3	2	2	2	2	3	4	4	3	-	-	-	-	-	30	350	370	100
3232	434134	10	5	11/23	5	4	3	3	3	3	3	3	3	3	3	4	4	4	7	7	4	3	4	10	330	280	100

FRUITING DATA - 1980

AM No.	PI No.	Fruit Amount	Front Size in	Fruit Resis		Plants that Fruited	Best Fruit prod.	*Avg. WT of Fruit of Grass	**Fruit Maturity Dates			
				DI	IN				9/14	10/15	11/05	12/10
3054	434135	7	12X12	9	-	2	-	-	-	-	-	-
3179	434112	0	-	-	-	-	-	-	-	-	-	-
3181	T02032	0	-	-	-	-	-	-	-	-	-	-
3182	To2033	7	18x22	3	1	6,5	5	-	5	9	0	0
3183	434113	7	22x30	5	1	1,2	-	-	8	9	9	9
3184	434114	2	15x18	3	1	1,2,4,6,8	1,6	6,7	3	6	8	8E
3185	434115	2	18x22	1	1	1,2,5,7	1	6.8	3	6	6	9
3186	434116	0	-	-	-	-	-	-	-	-	-	-
3189	434117	5	18x24	3	1	1,4	4	8.1	3	2.5	-	-
3190	434118	3	20x30	5	1	1-10	2	11.7	3	9	9	9
3191	434119	2	15x18	3	1	3,5	5	6.4	2	6	6	6
3192	434120	7	12x12	9	-	1,2,4	-	-	-	-	-	-
3193	T02036	0	-	-	-	-	-	-	-	-	-	-
3194	434121	3	35x45	3	1	1,2,3,6	3	36.7	3	3	4	8
3196	434122	0	-	-	-	-	-	-	-	-	-	-
3197	434123	1	18x22	1	1	1,4,5,7	7	5.1	1	2	3	3
3198	434124	5	18x22	3	1	2,3,4,6,8	8	5.9	3	5	6	9
3199	434125	1	12x15	3	1	2,3,4,6,9 10	6	3.8	3	3	4	6
3200	T02037	0	-	-	-	-	-	-	-	-	-	-
3201	434126	0	-	-	-	-	-	-	-	-	-	-
3204	To2038	3	14x13	3	1	1,5,6	6	10.8	6	9	9	9
3211	434128	0	-	-	-	-	-	-	-	-	-	-
3212	To2043	9	16x18	3	1	5	5	-	2	9	0	0
3213	434130	3	25x28	3	1	8	8	10.0	2	2	2	0
3214	434129	8	40x50	3	7	2	2	-	2.5	2.5	0	0
3216	To2045	0	-	-	-	-	-	-	-	-	-	-
3217	434131	7	28x37	3	1	6	6	27.0	2	6	9E	0

*Average weight of one fruit - 10 sampled per accession.

** Fruit Maturity Key -

1	Hard green,	5.	Mixed, firm fruit and drying.	0	Gone
2	Mature and on tree,	6	Mixed, firm, drying, some rotting	E	Partially eaten fruit
2.5	Rotting on tree/	7	Drying and shrivelling.		
3	Falling to ground.	8	Shrivelling and rotting.		
4	All on ground, firm fruit.	9	All dried up and rotting.		